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A. P = 782.4 mm Hg, V= ??, n= 0.1021 mol, T= 26.2 °C

$\frac{782.4 \text{ mm Hg}}{760 \text{ mm Hg}} \left| \frac{1 \text{ atm}}{} \right. = 1.029 \text{ atm}$

$26.2\,^{\circ}C + 273 = 299.2\ K$

$(1.029)(V) = (0.1021)(0.0821)(299.2)$

$V = 2.44 \text{ Liters}$

B. P = ?? mm Hg, V= 27.5 mL, n=0.007812 mol, T= 16.6 °C

$(P)(.0275) = (.007821)(.0821)(289.4)$ (.0275 L; 289.6 K)

$P = \frac{6.75 \text{ atm}}{1 \text{ atm}} \left| \frac{760 \text{ mm Hg}}{} \right. = 5133.2 \text{ mm Hg}$

C. P = 1.045 atm, V= 45.2 mL, n= 0.002241 mol, T= ?? °C

$(1.045)(.0452) = (.002241)(.0821)(T)$ (.0452 L)

$T = 256.7\ K$

$-\ 273$

$-16.27\,^{\circ}C$

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A. P = 7.74×10^3 Pa, V= 12.2mL, n= ??, T= 298 K

$\frac{7.74 \times 10^3 \text{ Pa} \mid 1 \text{ atm}}{101325 \text{ Pa}} = 0.0764 \text{ atm}$ $\frac{12.2 \text{ mL} \mid 1 \times 10^{-3} \text{ L}}{1 \text{ mL}} = 0.0122 \text{ L}$

$(0.0764)(0.0122) = (n)(0.0821)(298)$

$n = 0.000038 \text{ mol}$ or $3.81 \times 10^{-5} \text{ mol}$

B. P = ?? mm Hg, V= 43.0 mL, n= 0.421 mol, T= 223 K

0.043 L

$(P)(0.043) = (0.421)(0.0821)(223)$

$P = \frac{179.25 \text{ atm} \mid 760 \text{ mm Hg}}{1 \text{ atm}} = 136230 \text{ mm Hg}$

C. P = 455 mm Hg, V= ??mL, n= 4.4×10^{-2} mol, T= 331 C

$\frac{455 \text{ mm Hg} \mid 1 \text{ atm}}{760 \text{ mm Hg}} = .599 \text{ atm}$ $331^\circ\text{C} + 273 = 604 \text{ K}$

$(0.599)(V) = (4.4 \times 10^{-2})(0.0821)(604)$

$V = \frac{3.64 \text{ L} \mid 1 \text{ mL}}{1 \times 10^{-3} \text{ L}} = 3642.6 \text{ mL}$